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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,353	10/23/2003	Erle Miles	035505.00001	2730

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EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/693,353	MILES ET AL.	
	Examiner	Art Unit	
	Charles D. Garber	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 13-31* is/are pending in the application.

4a) Of the above claim(s) *1* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,13-23 and 27-30* is/are rejected.

7)☒ Claim(s) *24-26 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/23/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/23/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II, claims 13-31 in the reply filed on 02/21/2005 is acknowledged. The traversal is on the ground(s) that both groups are directed to detecting resiliency of playing surfaces. This is not found persuasive because playing surfaces is only an intended use of the device in both groups and detecting resiliency may be accomplished through vastly different and distinct means. Applicant also argues no undue burden as searches must overlap. Examiner does not consider the searches necessarily overlap and the burden is great as the limitations in respective groups are different.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation "said bearing" in the claim. There is insufficient antecedent basis for this limitation in the claim. It appears Applicant intended claim 26 to depend from claim 25 rather than claim 23 which will be assumed for purposes of further examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Coelus (US Patent 4,359,890).

Regarding claim 13, Coelus discloses an apparatus including tup 12 which is a missile for impacting said surface via rim 9. Items 34 and 35 are a guide for providing substantially unrestricted free flight of said missile prior to impacting said surface. Items 40 and 41 are a pair of accelerometers carried by said missile for producing signals in response to impact of said missile with said surface.

Recording instrument (no reference) shown in figure 1A receives the accelerometer signals (lines connecting accelerometers to the device) convert the signals (as shown in figure 2) and transmit converted signals to a storage (tape) and display unit (recording oscilloscope), see column 6 lines 3-10.

As for claim 17, figure 2 is in the form of a graph as would be displayed by a recording oscilloscope.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890).

Coelus as applied to claim 13 above does not expressly teach storage and display device is a computer. Examiner take Official Notice that using a computer for storage and display of signal data is notoriously well known in many fields including measuring and testing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a computer as computers are highly adaptable to signal processing, storage and display need.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) in view of Lampinen et al. (US Patent 5,454,264), Wood et al. (US Patent 6,536,263), Raines et al. (US Patent 5,259,240), and Chumley et al. (US Patent 3,408,870)

Regarding claim 14, Coelus as applied to claim 13 above does not teach a tube as a guide for a drop weight, the tube comprising a plastic tube, the tube having slots along its length and about its periphery.

Lampinen teaches a tubular body for guiding a drop weight so that it may be "substantially free to move" in the direction of impact. (column 1 lines 40-48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a tube to guide the drop weight as it may be substantially free to move and therefore reach its desired target without loss of movement.

Lampinen also teaches providing holes (plural) in the tubular body to allow air to flow as the drop weight is moving within the tubular body. (column 2 lines 56-59)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide holes to allow air to escape which might otherwise slow the body's descent.

Lampinen however says nothing about the shape of the holes being slots along the tube length as in the instant invention.

Chumley teaches holes 40 are slot shaped so that a cover mechanism may be used to vary the opening size. (column 3 lines 71 to column 4 line 4)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use slots along the length so that a cover mechanism may be used to vary the opening size and control an objects descent through the tube to achieve desired impact acceleration.

Lampinen also says nothing about the holes being about the tube periphery as in the instant invention.

Raines teaches holes 34 around the periphery of the tube as shown in figure 7. (column 5 lines 4-6) The holes appear to be distributed evenly about the periphery.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the holes about the periphery in an even patter which would ensure the fluid is exchausted from the tube symmetrically and ensure the weight is not induced to wobble and bind within the tube.

Lampinen also does not teach the body made of plastic.

Wood discloses a similar device with tubular body teaching the body may be made of ABS, plastic or metal which are all suitable materials

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the tubular body of plastic because it is a suitable material for the purpose.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) in view of Smock et al. (US Patent 5,390,535).

Regarding claim 15, Coelus as applied to claim 13 above discloses the accelerometers within a recess as shown in figure 1 but in the bottome surface not the upper surface.

Smock discloses a "drop module 14 includes a steel headform 68 which carries a linear accelerometer transducer 15. While the headform 68 may be one of any of a number available for surface resiliency testing, the preferred embodiment uses the 'C' Size ANSI metal headform for ASTM Procedure C, Test Method F355." The transducer appears to be installed in a recess in the top rather than bottom of the headform.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to install the accelerometer in the top surface so that it would not be on the side of impact which could damage the transducer.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) in view of Mahaffey et al. (US Patent Application 2005/0011249) and Hogan (US Patent 5,490,411).

Regarding claims 18 and 19, Coelus as applied to claim 13 above does not expressly teach accelerometer being operative to activate upon impact with said surface to produce signals in response to said impact.

Mahaffey teaches measuring signal from accelerometer 47 only after impact detected from accelerometer 43. (paragraph 0042)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to measure with accelerometer 47 only after impact is detected by a second accelerometer so that only the portion of the signal of real interest is recorded thus saving storage space and processing time.

Coelus also does not expressly teach a wireless communicator adapted to receive said signals produced by said accelerometer

Hogan discloses "display means are provided as well so that the output and other information from the computer can be visually inspected during the tests." Hogan teach "an alternative means for connection between the two modules is the use of radio means to transmit the data from the impact or transducer module to the computer."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use radio transmission so the test could be monitored remotely.

As for claim 20, Hogan teaches the alternative to radio communication is a cord. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a cord which is not as subject to radio interference.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) as modified by Mahaffey et al. (US Patent Application 2005/0011249) and Hogan (US Patent 5,490,411) and applied to claim 18 above and further in view of Smock et al. (US Patent 5,390,535).

Regarding claim 21, the references as applied to claim 18 above disclose the accelerometers within a recess or cavity as shown in figure 1 but in the bottom surface not the upper surface.

Smock discloses a "drop module 14 includes a steel headform 68 which carries a linear accelerometer transducer 15. While the headform 68 may be one of any of a number available for surface resiliency testing, the preferred embodiment uses the 'C' Size ANSI metal headform for ASTM Procedure C, Test Method F355." The transducer appears to be installed in a recess in the top rather than bottom of the headform.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to install the accelerometer in the top surface so that it would not be on the side of impact which could damage the transducer.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) as modified by Mahaffey et al. (US Patent Application

2005/0011249) and Hogan (US Patent 5,490,411) and Smock et al. (US Patent 5,390,535) and applied to claim 21 above and further in view of Hogan et al. (US Patent 4,856,318).

The references do not expressly teach the cavity includes a threaded bore, said accelerometer being mounted in said threaded bore.

Hogan '318 teaches "transducer 32 is an accelerometer fixably and rigidly attached to the impact head 14 by a threaded stud 34 integral to the accelerometer housing 33 engaging a threaded hole 35 in the impact head 14." The hole 35 or bore is shown in figure 3 to be within a cavity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the accelerometer in a threaded bore in a cavity in order to provide a fixed and rigid attachment which will ensure accurate reading.

Claims 23, 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coelus (US Patent 4,359,890) as modified by Mahaffey et al. (US Patent Application 2005/0011249) and Hogan (US Patent 5,490,411) and applied to claim 18 above and further in view of Lampinen et al. (US Patent 5,454,264), Raines et al. (US Patent 5,259,240), and Chumley et al. (US Patent 3,408,870)

The references do not teach a tube as a guide for a drop weight, the tube comprising an elongate tube, the tube having slits about its periphery.

Lampinen teaches a tubular body for guiding a drop weight so that it may be "substantially free to move" in the direction of impact. (column 1 lines 40-48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a tube to guide the drop weight as it may be substantially free to move and therefore reach its desired target without loss of movement.

Lampinen also teaches providing holes (plural) in the tubular body to allow air to flow as the drop weight is moving within the tubular body. (column 2 lines 56-59)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide holes to allow air to escape which might otherwise slow the body's descent.

Lampinen however says nothing about the shape of the holes being slits as in the instant invention.

Chumley teaches holes 40 are slit shaped so that a cover mechanism may be used to vary the opening size. (column 3 lines 71 to column 4 line 4)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use slots along the length so that a cover mechanism may be used to vary the opening size and control an objects descent through the tube to achieve desired impact acceleration.

Lampinen also says nothing about the holes being about the tube periphery as in the instant invention.

Raines teaches holes 34 around the periphery of the tube as shown in figure 7. (column 5 lines 4-6) The holes appear to be distributed evenly about the periphery.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the holes about the periphery in an even patter which

would ensure the fluid is exchausted from the tube symmetrically and ensure the weight is not induced to wobble and bind within the tube.

As for claim 28, Lampinen taught the tube made from aluminum which is synthesized from the raw material bauxite.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the tube of aluminum, a synthetic material, which is light weight and easier to carry than heavy weight materials.

As for claim 30, Lampinen further teaches the drop weight may include passages (plural) running parallel to it direction of motion which is a plurality of vertical vents that would necessarily be adjacent its periphery.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include passages (plural) running parallel to it direction of motion in order to further facilitate "free" fall.

As for claim 27 (Lampinen teaches magnet 8 which is a locking device operative to lock the missile in a stationary position within the tube until dropped. It could serve intended use of holding the missile for transport.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a locking mechanism such as magnet 8 so the missile may be held stationary until test is ready to commense.

As for claim 29, while Raines teaches modular sections for variable length, this is advantageous for instrument inserted into the ground at varying depth. Coelus would

not benefit from this as Coelus's invention may not be inserted into the ground as shown.

Chumley teaches the cylindrical tube composed of sections 32. This appears to be for the purpose of simplifying construction of a very tall cylinder which would be a challenge otherwise. However, as the claims do not limit the size of the instant invention it may be assumed the invention may be of very large construction based on the expected hardness of the surface to be tested.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the guide tube of sections in order to ease construction of a tube of great length depending on the type of surface to be tested.

Allowable Subject Matter

Claims 24-26 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 24, the prior art of Lampinen and Coelus teach the guide Includes a base (items 5 and 9 in the respective references discussed above) but not further including radially extending grooves arranged about its lower surface, the grooves acting to vent air from said tube during free flight of the missile through the tube.

As for claim 25, the prior art does not disclose a missile including a bearing arranged about its circumference separating the missile from said tube.

Claim 26 which Examiner assumes should depend from allowable claim 25 is considered allowable for the same reason.

As for claim 31, the prior art taught a guide tube with open upper and lower ends (see Lampinen or Chumley) as well as a centering handle arranged above the upper end (see Coelus items 21, 23). However, the references do not disclose or suggest first means pivotally mounting said centering handle at one end and second means releasably connecting said centering handle at a second end with said guide whereby said centering handle may be pivoted about said first means to allow entry into said guide through said upper end as in the instant invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

CHARLES GARBER
PRIMARY EXAMINER